

MR3003-78
Serial Number: 10/790,818
Reply to Office Action dated 12 December 2005

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 12 December 2005. Responsive to the objections and rejections made in the Official Action, Claims 1 and 7-9 have been amended to clarify the language thereof and/or the combination of elements which form the invention of the subject Patent Application. Additionally, Claims 2-6 have been cancelled by this Amendment and new Claim 10 has been added.

In the Official Action, the Examiner objected to the Title as not being descriptive and required a new Title that is clearly indicative of the invention to which the Claims are directed. Accordingly, the Title has been amended to -- ORGANIC LIGHT-EMITTING DEVICE WITH STACKED EMITTING LAYERS --, which is believed to be clearly indicative of the invention of the subject Patent Application, as now claimed.

In the Official Action, the Examiner objected to Claim 8 due to a typographical error therein. Accordingly, Claim 8 has been amended to correct the informality kindly noted by the Examiner.

Claims 1-9 were rejected under 35 U.S.C. § 102(b), as being anticipated by Adachi, et al., U.S. Patent Application Publication 2002/0180347.

Before discussing the prior art relied upon by the Examiner, it is believed beneficial to first briefly review the structure of the invention of the subject Patent Application, as now claimed. The invention of the subject Patent Application is

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directed to an organic light-emitting device. The device includes a first electro-conductive layer and a plurality of emission layers. A first of the emission layers is contiguously disposed on a top surface of the first electro-conductive layer. The remaining emission layers are stacked on the first emitting layer in turn. The organic light-emitting device further includes a second electro-conductive layer contiguously disposed on an upper most one of the stacked emission layers. A supplied voltage is connected between the first and the second electro-conductive layers.

From another aspect, as now defined in new Claim 10, the invention of the subject Patent Application is directed to an organic light-emitting device having a transparent substrate and a first electro-conductive layer disposed on the substrate. The device includes a second electro-conductive layer spaced from the first electro-conductive layer. Still further, the device includes a plurality of emitters stacked one upon another between the first and second electro-conductive layers. Each of the stacked emitters includes an emission layer having opposing first and second sides and a hole transport layer having a first side disposed contiguous the first side of the emission layer. Each emitter further includes an electron transport layer having a first side disposed contiguous the second side of the emission layer. Each emitter includes a hole injection layer having a side thereof disposed contiguous a second side of the hole transport layer, and an electron injection layer

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having a side thereof disposed contiguous a second side of the electron transport layer.

In contradistinction, the Adachi, et al. reference is directed to a double doped-layer, phosphorescent organic light emitting device. The reference discloses a structure wherein electro-conductive layers in the form of an anode and a cathode are provided between which is disposed first and second hole transport layers (HTL) and first and second electron transporting layers (ETL). The structure is defined by the anode being disposed on a substrate and a first hole transporting layer being disposed on the anode and the second hole transporting layer being disposed on the first hole transporting layer. The first electron transporting layer is disposed on the second hole transporting layer and the second electron transporting layer is disposed on the first electron transporting layer, with the cathode being disposed on the second electron transporting layer. The adjacent first electron transporting layer and second hole transporting layer function as emission layers. Therefore, since the emission layers of the reference (second HTL and first ETL) are separated from the cathode and anode by the first hole transmitting layer and the second electron transporting layer, respectively, the reference fails to disclose or suggest an organic light emitting device wherein a first of the emission layers is contiguously disposed on a top surface of the first electro-conductive layer, and the second electro-conductive layer is contiguously disposed on an upper most of the stacked emission layers, as now claimed.

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Therefore, the invention of the subject Patent Application provides a simplified structure that is more efficient to manufacture.

Further, while the reference discloses that the stacked layers are disposed on a substrate, paragraph 14, nowhere does the reference disclose the substrate as being transparent, as defined in Claim 7.

With respect to new Claim 10, the invention of the subject Patent Application provides a plurality of stacked emitters wherein each emitter includes both carrier injection layers and carrier transport layers adjacent thereto. Whereas in the reference relied upon by the Examiner, the hole transport layer adjacent the anode may function as a hole injecting layer, paragraph 16, and that the electron transporting layer adjacent the cathode may function as an electron injecting layer, paragraph 22. Thus, rather than providing separate and distinct layers for carrier injection and carrier transport to the emission layers, this reference teaches away from that structure.

As the reference fails to disclose each and every one of the elements which form the invention of the subject Patent Application, as now claimed, it cannot anticipate that invention. Further, as the reference fails to suggest the combination of elements which form the invention of the subject patent Application, and in fact teaches away from that invention, it cannot make obvious that invention either.

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For all of the foregoing reasons, it is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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DAVID I. KLEIN

12 April 2006
Date